Generator Failure Off Cat 4

by Lt. Matthew Boyle

As a nugget, I should have known that it was going to be a bad night when rain started pouring as my rightseater and I began preflighting for the 0430 launch. We were one of two mission tankers for an F-14 section's long-range strike against our sister carrier at dawn. Oh, by the way, CAG and the Tomcat CO were in the two strike aircraft.

The other tanker launched first and headed outbound to the rendezvous point down PIM. The rain turned into a downpour turned into a driving rain as we taxied to cat 4 behind the E-2C on cat 3. Man, that Hawkeye disappeared quickly at the end of the stroke. I could tell there were going to be some nasty flight hours before the sun came up.

We finished the final checks, and everything looked normal as the aircraft went into tension and I wiped out the controls. Tapes, gauges, lights, ready to go. I turned on the lights and waited for the shooter to send us out into the blackness.

The initial jolt of the cat shot was pretty hefty, and it was a good stroke...that is, until we got airborne. As we lifted off the deck, I began to go through my habitual rotation scan. The big problem wasn't that my scan had been broken; the difficulty was that I couldn't see anything. The cockpit had gone completely black!

My first thought was, "Wow, it's dark." Then, I pulled back on the stick and hoped we were climbing away from the water. I set what I thought was a good pull, and then my throttle hand went immediately to my boom microphone to activate my lip light. Yeah, the one I had briefed I would leave on during the launch. The immediate illumination of the instruments was very comforting. The first thing I saw was the needle on the AOA gauge indicating 16 units. Next, I looked at the altimeter and saw we were climbing away from the water passing through 200 feet. The cockpit was still black.

At about 350 feet, the lights came back on as the number two generator picked up the load. I immediately reverted back to my normal takeoff scan and procedures. I raised the gear and felt reassured as the VSI slowly increased and we climbed away from the water, at an even faster rate.

Climbing through 800 feet, I noticed that the primary attitude source was indicating about 35 degrees nose-up and about 20 degrees left bank. With no visible horizon, I knew that I didn't want to be in a turn, and I normally only hold 10 to 15 degrees nose up on the climb. I slowly started to ease the pull and level my wings. Things were going better now, or so I thought.

As I continued with my scan, I noticed the VSI at a negative 500-fpm descent and sure enough, the altimeter

showed us descending back through 800 feet. Great! Both of us now realized that something was wrong as my COTAC called, "Check your standby."

Now I was flying off the standby gyro at 800 feet, no horizon whatsoever, and the first thing we heard on the radio was, "Ninety-nine, mother is in Thunderstorm Condition Two". Things were getting better and better. I knew the first priority was to get as far away from the water as I could, so I just held the flaps in the takeoff position and climbed out on the standby gyro at 150 knots. I had always briefed that with any kind of emergency off the cat, my plan would be to climb through 1,000 feet or whatever layer might be there. When the lights came on, we saw that the number one generator was dropping off-line, and the number two had failed to pick up the load immediately. Once we were safely climbing, the COTAC began to go through the memory items and tried resetting the number one generator, without success.

The next step was to fire up the APU, so we wouldn't once again be left in the dark if the number two generator dropped the load.

We notified departure of our emergency and they immediately countered with a request to state our intentions. My only intention was to find a nice, comfortable VMC altitude, level off there, and gain time to think about our situation. After reaching a clear pocket at 8,000 feet, we were headed back toward the ship, level, at 250 knots.

There were some big buildups, and we were still going in and out of clouds overhead mother at 8,000 feet. At this point, the COTAC was working on getting us a solid attitude reference, but was having no luck. Our TACAN was working, so at least we knew where the ship was. I wasn't thrilled about the prospect of penetrating back through the overcast, in "Thunder II," on a standby gyro that could give out at anytime.

I'm sure my COTAC was doing some quick risk management since he was flying with the newest pilot in the squadron. We did have our other mission tanker airborne, and departure had already asked if we would like them to join on us. Flying night form was much more appealing than using the standby gyro to get back down, so we had departure give them an RTB call and bring them back our way. They were 50 miles away and headed out on their mission, but we needed their help and the strike package wouldn't launch for another 30 minutes.

A few minutes later, we saw their lights coming to join on us. They joined up nicely in the clear pocket we had found, and we gladly passed them the lead. Now all we had to do was follow them down for the section approach.

We knew there was a lot of weather below us, and I confessed that I was fighting the leans a little bit. I recommended to the COTAC that we should dirty up at altitude while we were still VMC. We passed this on to lead, who then told approach of our intentions. Once we were both dirty, it was all a matter of flying good form, not losing sight, and landing on the boat (which, of course, was calling winds of more than 35 knots).

We started our descent to 1,200 feet for a long straight-in. We were VMC upon reaching that altitude, a nice change to our streak of bad luck that night. Finally, the lights of the ship were starting to break out at 4 miles. I think it's the first time seeing those lights has ever been relaxing.

At three-quarters of a mile, with a ball on the lens, our lead kissed us off and I flew a full high, full fast, chase line-up all the way approach for the OK 3-wire.

Fly what you brief. I had a lip light on my helmet for about a month, and I always brief that I'll turn it on before a night cat shot. I actually only did it about half the time before that night. It didn't take long for me to turn it on, but it would have been one less thing to worry about as we were flying away. It also would have lit up the cockpit much sooner, and we wouldn't have had those few seconds of pitch black, wondering if we were headed for the water.

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Next, always cross-check your instruments. If I had trusted my main gyro once we got power back, we'd have flown into the water. I also learned to assess the situation and not be afraid to take charge of it. We easily could have decided not to bring our playmate back so that he could do his mission. This would have put us in a partial-panel situation, in bad weather, on a very nasty night.

After we recovered, our squadron representative in CATCC brought up the option of staying overhead until the sun came up an hour and a half later. We decided it was better to break the chain of events that had been rapidly building and get down as soon as possible because the standby gyro was the only reliable instrument we had. Also, thinking ahead and dirtying up on top really helped make the approach easier.

The last thing I learned that night was to practice things like section approaches whenever you can. It's one thing to do it at the field and another to do it for real at the boat. I sure never expected to be doing one that night.

Lt. Boyle flies with VS-38.